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CANADA

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GEOLOGICAL SURVEY OF CANADA

WATER SUPPLY PAPER No. 303

GROUND-WATER RESOURCES OF TOWNSHIPS 35 to 38, RANGES 17 to 20, WEST OF 4th MERIDIAN, ALBERTA

By

A. Mac S. Stalker

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INTRODUCTION

The survey of the ground-water resources of the Red Deer region, Alberta, was resumed during the field season of 1946, and much information on these resources was obtained by a compilation of records of water wells.

A division has been made in the well records, in so far as possible, between the glacial and bedrock water-bearing sands. The water records themselves were obtained mostly from the well owners, some of whom had acquired the land after the water supply had been found, and hence had no personal knowledge of the water-bearing beds that had been encountered in their wells. Also, the elevations of the wells were taken by aneroid barometer and are, consequently, only approximate. In spite of these defects, however, it is hoped that the publication of these water records may prove of value to the farmers, town authorities, and drillers in their efforts to obtain adequate water supplies.

Publication of Results

The essential information pertaining to ground-water conditions is being issued in reports that in Saskatchewan cover each municipality, and in Alberta cover each square block of sixteen townships beginning at the 4th meridian and lying between the correction lines. The secretary-treasurer of each municipality in Saskatchewan and Alberta will be supplied with the information covering that municipality. Copies of the reports will also be available for study at offices of the Provincial and Federal Departments. Further assistance in the interpretation of the reports may be obtained by applying to the Chief Geologist, Geological Survey, Ottawa. Technical terms used in the report are defined in the glossary.

How to Use the Report

Anyone desiring information concerning ground water in any particular locality will find the available data listed in the well records. These should be consulted to see if a supply of water is likely to be found in shallow wells sunk in the glacial drift, or whether a better supply may be obtained at greater depth in the underlying bedrock formations. The wells in glacial drift commonly show no regional level, as the sands or gravels in which the water occurs are irregularly distributed and of limited extent. As the surface of the ground is uneven, the best means of comparing water wells is by the elevations of their water-bearing beds. For any particular well this elevation is obtained by subtracting the figure for the depth of the well to the water-bearing bed from that for the surface elevation at the well. For convenience, both the elevation of the wells and the elevation of the water-bearing bed or beds in each well are given in the well-record tables. Where water is obtained from bedrock, the name of the formation in which the water-bearing sand occurs is also listed in these tables, and this information should be used in conjunction with that on bedrock formations, provided in the report, which describes these formations and gives their thickness and sequence. Where the level of the water-bearing sand is known, its depth at any point can easily be calculated by subtracting its elevation, as given in the well-records tables, from the elevation of the surface at that point.

With each report is a map consisting of two figures. Figure 1 shows the distribution and type of surface deposits and bedrock formation that occur in the area. Figure 2 shows the locations of all wells for which records are available, the class of well at each location, and the contour lines or lines of equal elevation. The elevation at any location can thus be roughly judged from the nearest contour line, and the records of the wells show at what levels water is apt to be encountered. The depth of the well can then be calculated, and some information on the character and quantity of water can be obtained from a study of the records of surrounding wells.

GLOSSARY OF TERMS USED

Alkaline. The term "alkaline" has been applied rather loosely to some ground waters that have a peculiar and disagreeable taste. In the Prairie Provinces, water that is commonly described as alkaline usually contains a large amount of sodium sulphate and magnesium sulphate, the principal constituents of Glauber's salt and Epsom salts respectively. Most of the so-called alkaline waters are more correctly termed sulphate waters, many of which may be used for stock without ill effect. Water that tastes strongly of common salt is described as salty.

Alluvium. Deposits of earth, clay, silt, sand, gravel, and other material on the flood-plains of modern streams and in lake beds.

Aquifer. A porous bed, lens, or pocket in unconsolidated deposits or in bedrock that carries water.

Buried pre-Glacial Stream Channel. A channel carved into bedrock by a stream before the advance of the continental ice-sheet, and subsequently either partly or wholly filled in by sands, gravels, and boulder clay deposited by the ice-sheet or later agencies.

Bedrock. Bedrock, as here used, refers to partly or wholly consolidated deposits of gravel, sand, silt, clay, and marl that are older than the glacial drift.

Coal Seam. The same as a coal bed. A deposit of carbonaceous material formed from the remains of plants by partial decomposition and burial.

Contour. A line on a map joining points that have the same elevation above sea-level.

Continental Ice-sheet. The great ice-sheet that covered most of the surface of Canada many thousands of years ago.

Escarpment. A cliff or a relatively steep slope separating level or gently sloping areas.

Flood-plain. A flat part in a river valley ordinarily above water but covered by water when the river is in flood.

Glacial Drift. The loose, unconsolidated surface deposits of sand, gravel, and clay, or a mixture of these, that

were deposited by the continental ice-sheet. Clay containing boulders forms part of the drift and is referred to as glacial till or boulder clay. The glacial drift occurs in several forms:

(1) Ground Moraine. A boulder clay or till plain (includes areas where the glacial drift is very thin and the surface uneven).

(2) Terminal Moraine or Moraine. A hilly tract of country formed by glacial drift that was laid down at the margin of the continental ice-sheet during pauses in its retreat. The surface is characterized by irregular hills and undrained basins.

(3) Glacial Outwash. Sand and gravel plains or deltas formed by streams that issued from the continental ice-sheet.

(4) Glacial Lake Deposits. Sand and clay plains formed in glacial lakes during the retreat of the ice-sheet.

Ground Water. Sub-surface water, or water that occurs below the surface of the land.

Hydrostatic Pressure. The pressure that causes water in a well to rise above the point at which it is first encountered.

Impervious or Impermeable. Beds, such as fine clays or shale, are considered to be impervious or impermeable when they do not permit of the perceptible passage or movement of ground water.

Pervious or Permeable. Beds are pervious when they permit of the perceptible passage or movement of ground water, as for example porous sands, gravel, and sandstone.

Pre-Glacial Land Surface. The surface of the land before it was covered by the continental ice-sheet.

Recent Deposits. Deposits that have been laid down by the agencies of water and wind since the disappearance of the continental ice-sheet.

Unconsolidated Deposits. The mantle or covering of alluvium and glacial drift consisting of loose sand, gravel, clay and boulders that overlies the bedrock.

Water-table. The upper limit of the part of the ground wholly saturated with water. This may be very near the surface or many feet below it.

Wells. Holes sunk into the earth so as to reach a supply of water. When no water is obtained they are referred to as dry holes. Wells in which water is encountered are of three classes.

(1) Wells in which the water is under sufficient pressure to flow above the surface of the ground.

(2) Wells in which the water is under pressure but does not rise to the surface.

(3) Wells in which the water does not rise above the water-table.

BEDROCK FORMATIONS OF EAST-CENTRAL ALBERTA

The formations that outcrop in east-central Alberta are of Tertiary and Upper Cretaceous age, and consist entirely of relatively soft shales and sandstones, with some bands of hard sandstone and layers of ironstone nodules. The succession, character, and estimated thickness of the formations are shown in the following table:

Age	Formation	Character	Thickness
			Feet
Tertiary	Paskapoo	Light grey sandstone, in part carbonaceous; shale; small amounts of siliceous limestone and volcanic dust; coal seams.	800 ±
	Edmonton	Grey to white, bentonitic sands and sandstones, with grey and greenish shales; coal seams prominent in some areas, as at Drumheller.	1,000 to 1,150
	Bearpaw	Dark shales, green sands with smooth, black chert pebbles; partly non-marine, with white bentonic sands, carbonaceous shales, or thin coal seams similar to those in Pale Beds; shales at certain horizons contain lobster-claw nodules and marine fossils; at other horizons selenite crystals are abundant.	300 to 600
Upper Cretaceous	Pale and Variegated Beds	Light grey sands with bentonite; soft, dark grey and light grey shales with selenite and ironstone; carbonaceous shales and coal seams; abundant selenite crystals in certain layers.	600 ±
	Birch Lake (?)	Grey sand and sandstone in upper part; middle part of shales and sandy shales, thinly laminated; lower part with grey and yellow weathering sands; oyster bed commonly at base.	100 ±
	Grizzly Bear	Mostly dark grey shale of marine origin, with a few minor sand horizons; selenite crystals and nodules up to 6 or 8 inches in diameter.	100 -
	Ribstone Creek	Grey sands and sandstones at the top and bottom with intermediate sands and shales; mostly non-marine, but middle shale in some areas is marine.	325 -

WATER ANALYSES

Introduction

The following discussion of water analyses is included to assist those who wish to know the effect of various mineral constituents in well water, which give the water in some wells certain peculiar qualities.

Discussion of Chemical Determinations

The dissolved mineral constituents vary with the material encountered by the water in its migration to the reservoir bed. The mineral salts present are referred to as the total dissolved solids, and they represent the residue when the water is completely evaporated. This is expressed quantitatively as "parts per million", which refers to the proportion by weight in 1,000,000 parts of water. A salt when dissolved in water separates into two chemical units called "radicals", and these are expressed as such in the chemical analyses. In the one group is included the metallic elements of calcium (Ca), magnesium (Mg), and sodium (Na), and in the other group are the sulphate (SO_4), chloride (Cl), and carbonate (CO_3) radicals.

Mineral Constituents Present

Calcium (Ca) in the water comes from mineral particles present in the surface deposits, the chief source being limestone, gypsum, and dolomite. Fossil shells provide a source of calcium, as does also the decomposition of igneous rocks. The common compounds of calcium are calcium carbonate ($CaCO_3$) and calcium sulphate ($CaSO_4$).

Magnesium (Mg) is a common constituent of many igneous rocks and, therefore, very prevalent in ground water. Dolomite, a carbonate of calcium and magnesium, is also a source of the mineral. The sulphate of magnesium ($MgSO_4$) combines with water to form "Epsom salts", and if present in large amounts imparts a bad taste and is detrimental to the health.

Sodium (Na) is derived from a number of important rock-forming minerals, so that sodium sulphate and carbonate are very common in ground waters. Sodium sulphate (Na_2SO_4) combines with water to form "Glauber's salts", which if present in amounts over 1,200 parts per million makes the water unfit for domestic use or for irrigation. Sodium carbonate (Na_2CO_3) or "black alkali" waters are mostly soft, the degree of softness depending upon the ratio of sodium carbonate to the calcium and magnesium salts. Waters containing sodium carbonate in excess of 200 parts per million are unsuitable for irrigation.

Chlorine (Cl) is, with a few exceptions, expressed as sodium chloride (NaCl), which is common table salt. When found in water in excess of 400 parts per million it renders the water unfit for domestic use.

Iron, when present in more than 0.1 parts per million, will settle out of the water as a red precipitate on exposure to the air. Water that contains not more than 0.5 parts per million

is considered the usual upper limit for potable water, but this amount is often exceeded. A water that contains considerable iron will stain porcelain, enamel ware, and clothing that is washed in it, but the iron can be almost completely removed by aeration and filtration of the water.

Hardness. Hardness is of two kinds, temporary and permanent. Temporary hardness is caused by calcium and magnesium bicarbonates, which are soluble in water but are precipitated as insoluble normal carbonates by boiling, as shown by the scale that forms in teakettles. Permanent hardness is caused by the presence of calcium and magnesium sulphates, and is not removed by boiling. Waters grade from very soft to very hard, and can be classified according to the following system[1].

[1] The "Examination of Waters and Water Supplies"; Thresh and Beale, Fourth Ed. 1933, p. 21.

A water under 50 degrees (that is, parts per million) of hardness may be said to be very soft.

A water with 50 to 100 degrees of hardness may be said to be moderately soft.

A water with 100 to 150 degrees of hardness may be said to be moderately hard.

A water with more than 200 and less than 300 degrees of hardness may be said to be hard.

A water with more than 300 degrees of hardness may be said to be very hard.

Hard waters are usually high in calcium carbonate. Almost all of the waters from the glacial drift are of this type, particularly those not associated with sand and gravel deposits that come close to the surface.

In soft water the calcium carbonate has been replaced by sodium carbonate, due to natural reagents present in the sands and clays. Bentonite and glauconite are two such reagents known to be present. Montmorillonite, one of the clay-forming minerals, has the same property of softening water, owing to the absorbed sodium that is available for chemical reaction.[2]

[2] Piper, A.M.: "Ground Water in Southern Pennsylvannia", Penn. Geol. Surv., 4th series.

If surface water reaches the lower sands by percolating through the higher beds it may be highly charged with calcium salts before reaching the bedrock formations containing bentonite or glauconite. The completeness of the exchange of calcium carbonate for sodium carbonate will, therefore, depend upon the length of time that the water is in contact with the softening reagent, and also upon the amount of this material present. The rate of movement of underground water will, consequently, be a factor in determining the extent of the reaction.

TOWNSHIPS 35 to 38, RANGES 17 to 20, WEST OF THE FOURTH MERIDIAN, ALBERTA

Introduction

The investigation of ground-water resources in Alberta was continued during the summer of 1948 by the writer, ably assisted by H. Van Camp. The surface deposits were also mapped, and the relation of both the surface deposits and the underlying bedrock to the ground-water supply studied.

Physical Features

The northeastern and eastern townships of this area have, in general, a fairly smooth surface that to the north and south of Gough Lake, and near Shooting Lake, becomes almost flat. Other sections of these townships are characterized by broad, gently sloping, low hills. In the northwestern townships the hills are generally small, low, and gently rolling, but become higher towards the south. The general elevation of these northern and eastern townships is around 2,700 to 2,800 feet.

The southwestern townships show more variation in topography. The general elevation is from 100 to 300 feet higher than that in the rest of the area, the hills are larger and higher, and the distinctive knob and kettle topography of terminal moraine deposits is present. Also, through these townships runs Big Valley Creek, cutting through the morainal area in a flattish valley nearly a mile wide. This is the largest stream in the area, and its valley is the most striking topographic feature.

The main physical features, such as the elevation of the land surface, the prominent ridges, and many of the hills and valleys, are determined by bedrock. Only minor features are formed in drift, such as some low hills, and the rolling surface of much of the area. Most of the lakes occur in hollows in bedrock; many become nearly dry in summer and fairly alkaline at low water.

The Edmonton formation underlies the glacial drift throughout the area and comprises all rock outcrops. Drift cover is generally thin and outcrops are common, particularly around Marion (Island), Lonepine, and Beltz Lakes, in and along the sides of Big Valley, in a region 2 miles south of Sabine, 2 miles southeast of Leo, and southeast of Ewing Lake.

Geology

Bedrock Formations

The Edmonton Formation. The name Edmonton formation was first applied to the beds containing coal in the Edmonton area, and later to the same beds in adjoining areas. The formation has a total thickness of 1,000 to 1,150 feet, but is bevelled off eastwards, and the eastern edge of the formation follows a northwest line from Coronation through Tofield to a point on North Saskatchewan River about midway between Edmonton and Fort Saskatchewan. No Edmonton beds occur northeast of this line, but the formation becomes progressively thicker to the southwest in the direction of the dip of the beds.

The Edmonton formation consists of poorly bedded, grey and greenish clay shale, coal seams, and sand and sandstone that contain clay and a white material known as bentonite. This material when wet is very sticky and swells greatly in volume; when dry it tends to whiten the beds containing it. Such beds are relatively impervious to water, and at the surface produce the 'burns' of barren ground, where vegetation is scanty or absent. Such a burn may be seen just west of Marion (Island) Lake. It is the impervious nature of this material that prevents the water in many of the lakes and ponds from seeping away.

Good sections of the upper part of the Edmonton formation may be seen along Red Deer River west of the area, and some of the lower members are exposed to the east near Battle River, in Paintearth Creek, and near Sullivan Lake.

The drift over much of the area is composed largely of material eroded from the Edmonton formation, and both are much the same in colour and composition. The latter may, however, be distinguished by the presence of bedding on the fresher surfaces, the occurrence of coal seams, and the general lack of igneous pebbles.

Bearpaw Formation. This formation lies beneath the Edmonton, at a depth of about 500 feet in the east part of the area and 1,000 feet in the west. It consists largely of bentonitic shale and sandstone, mostly deposited in sea water. No wells in the area produce from it and its water is probably salty and in poor supply. Sufficient supplies of water can almost always be found above the Bearpaw in this area and wells should not enter it.

Unconsolidated Deposits

During Pleistocene or Glacial time, great accumulations of ice formed at various centres in northern Canada. This ice moved out in all directions from these centres and covered large regions with what has been called the continental ice-sheet. As the ice advanced it picked up great quantities of loose rock debris that was deposited when the ice finally melted. This material is unconsolidated and is commonly called glacial drift.

The present area was entirely covered by one or more continental ice-sheets during Pleistocene time, and the final retreat of the ice left the bedrock covered to a variable depth with a mantle of glacial drift, which constitutes the unconsolidated deposits in the area. In the eastern part of the area this mantle is only from 2 to 20 feet thick or may locally be absent. In the western part it is generally thicker, from 30 to 50 feet deep, and may be even more in the southwest. Most of the glacial drift consists of boulders and pebbles of various compositions and sizes embedded in a matrix of clay or sandy clay to form a more or less impervious mass known as boulder clay or till.

Irregularly intermingled with this impervious mass, and also lying above it, are beds, pockets, and lenses of sand and gravel that form the water-bearing members or aquifers of the drift.

Ground Moraine. This type of glacial drift is chiefly till or boulder clay laid down beneath the ice-sheet. It consists of a heterogeneous mixture of clay, boulders, and pebbles often enclosing lenses and pockets of water-laid sand and gravel, although these last are scarce in the area. The till here is a whitish or light greyish colour and pebbles are generally less than 3 or 4 inches in diameter and comparatively scarce.

Ground moraine covers about one-half of the total area, or nearly 300 square miles, being most common in the eastern townships.

Terminal Moraine. Part of the material carried by the ice-sheet is dropped at its front or margin during pauses in the general retreat of the melting glacier. It consists of boulder clay, silt, sand, and gravel gathered during the advance of the ice-sheet. Much of the clay, silt and fine sand may have been carried away by water from the melting glacier, and the material forming terminal moraine is mostly coarser than that seen in ground moraine. It consists mainly of gravel, sand, and coarse till, characteristically arranged in hummocks and undrained or poorly drained hollows to form what is known as knob and kettle topography.

The townships forming the southwestern quarter of the area, about 140 square miles, are covered with the hills and depressions formed by terminal moraines. The material is mainly whitish or greyish in colour, and is generally finer than that commonly found in such moraines.

Glacial-lake Deposits. During the melting back of the ice-sheet many lakes were formed, the outlets of which were temporarily blocked by lobes of ice or masses of glacial debris. Sand, silt, and clay were washed into these lakes from the ice-sheet and there deposited. Upon

the draining or lowering of these lakes this material was exposed in discontinuous patches here and there throughout the area, the largest being in the northwestern part. Similar material was deposited in streams draining these lakes or running out of the melting ice. Other deposits were formed by the reworking of the original glacial-lake deposits by recent streams or wind. Deposits of these types have been included with the glacial-lake deposits on the map.

Water Supply

The main features of ground-water supply in this area are the nearness of the Edmonton formation to the surface and the ease with which water may generally be found in it. In most parts of the area the drift is thin and the probability of finding an adequate supply of water in it is poor. Furthermore, the water in the Pleistocene deposits contains a considerable quantity of lime and is mostly hard. It may also be alkaline and contain iron, but is seldom unfit for use.

In some sections, however, the groundwater in pockets of gravel and in areas of glacial-lake sands may be important. One such locality is the deposit of lake sands in the northwest part of the area, where the relatively thick growth of trees indicates abundance of water near the surface. The gravels of Big Valley Creek also hold abundant water. In the vicinity of Gadsby and a few other areas where water is rather difficult to obtain in the Edmonton, the water in the surface deposits may be of importance.

Most of the wells in this area derive their water from the Edmonton formation at depths of less than 150 feet. A few go deeper, one being 400 feet, but the lower part of the formation in this part of Alberta generally contains little water. The Edmonton formation contains much sand, commonly in the form of isolated, irregularly distributed lenses.

Some horizons of the Edmonton contain more of these lenses than others and, because the water is in the sand, these horizons are most likely to yield adequate supplies. Water may also be found near coal seams, either above or below, and these aquifers can in places be traced for considerable distances. The beds of the Edmonton formation dip to the west or the southwest in the area at a rate of perhaps 15 or 20 feet a mile. Thus, 3 or 4 miles to the west, an aquifer will be 50 or 60 feet lower in elevation, and another aquifer may appear above it. In the opposite direction an aquifer will reach the surface and disappear. Thus, few aquifers are traceable over any great distance in an east-west direction, but may be traced for much greater distances in a north-south direction. The supply of water in practically all wells in the area is at least sufficient, and is usually good or very good. The water generally rises fairly high in the wells except in the terminal moraine areas in the southwest and towards Red Deer River. Water entering the Edmonton beds through glacial deposits is usually charged with calcium carbonate and thus hard, but sodium carbonate from the Edmonton replaces the calcium carbonate, softening the water. Generally, the longer water is in contact with the Edmonton formation, the softer it becomes, and, though hard or medium hard water may be found near the top, practically all the water from deeper wells is soft.

Sodium carbonate is the principal mineral in water from the Edmonton formation. A small amount of iron is present in places and some carbonaceous material occurs in water from near coal seams.

The Bearpaw formation, which underlies the Edmonton in this area, usually contains little water, and that little commonly salty. It is, therefore, seldom advisable to drill below the base of the Edmonton.

Township 35, Range 17. The greater part of this township is covered with a thin layer of ground moraine; over the northeastern sections bedrock is almost at the surface. In a few areas drift is heaped up into a low form of knob and kettle topography, and around Leo is an area of glacial-lake and wind-blown sands in places as much as 30 feet thick. In the latter area a few sand dunes are a feature. The surface of the township has a general slope towards the northwest, and the surface of the water-table has a similar slope.

A few wells, mainly in the northern and western parts of the township, draw their water from the surface deposits. Most of these are in lake, or wind-blown sand. The water is obtained at depths of from 15 to 30 feet. It is under little pressure and rises only a short distance in the wells. In all cases it is hard and sometimes fairly alkaline, but the supply seems to be satisfactory.

As surface deposits are thin over much of the area, it is generally better to depend on wells in the bedrock for adequate water supply. These wells range in depth from 30 to 180 feet, averaging around 100 feet. There is no single prominent aquifer, but most of the wells obtain their water at elevations between 2,640 and 2,665 feet, with a few at lower elevations and a number at an elevation of about 2,690 feet.

The water in these wells is under good pressure, and in most wells rises to between 2,700 and 2,750 feet. The supply of water in the bedrock seems entirely satisfactory. With only two exceptions, one of which is a spring, the water is soft.

In this township any well into the bedrock is practically certain to obtain a good supply of soft water within a reasonable depth.

Township 35, Range 18. Gough Lake covers approximately 10 square miles of this township. The level of this lake varies greatly from year to year, and when it is low the water may become too alkaline for cattle. Most of the remainder of the township has only a thin covering

of ground moraine and the underlying bedrock determines the topography. Vegetation in this thin mantle of soil is scanty. About 6 square miles of the western part of the township is covered by terminal moraines with their distinctive knob and kettle topography rising above the ground moraine in a distinct ridge that may be seen from the east for several miles. Apart from this knob and kettle area the surface is generally flat.

The thin mantle of drift is not likely to produce a good supply of water and only one well was noted (in section 12) that probably drew its water from surface deposits. This well appeared to have a fairly good supply of hard water.

The bedrock is a far better source of water, indeed the only source over most of the township. The wells in bedrock vary greatly in depth, most being between 80 and 100 feet deep but one as deep as 229 feet. The elevations of the aquifers range from 2,525 feet to about 2,725 feet, being lowest in the southern sections and rising steadily to the north and west. In the sections west of Gough Lake water is generally found between 2,640 and 2,675 feet elevation. Water in the bedrock wells rises to an elevation of about 2,710 feet near Gough Lake and higher away from the lake, to about 2,725 feet in the southeast and southwest, and to about 2,750 feet in the northwest. The supply of water from bedrock wells seems entirely satisfactory. Only two of these contained hard water, and both were shallow. Soft water may be expected from any well deeper than about 60 feet, but there may be a slight amount of iron in some, especially near the centre of the township.

Township 35, Range 19. Almost the whole of this township is covered by terminal moraines showing the typical knob and kettle type topography. They consist mostly of a brown, sandy, often gravelly, till seldom more than 20 or 30 feet thick. In general the hills are up to 50 feet high, but here and there one may rise to about 100 feet. This area is thinly populated, and mostly used for cattle range. It contains many small sloughs and ponds, most of which are somewhat alkaline. The northeast part

of the township, mainly section 36, is overlain by 5 to 10 feet of ground moraine and has many areas of outcrop. The valley of Big Valley Creek runs through the northwest corner in section 31, and in it bedrock is generally covered by only a few inches of sod. Many deposits of gravel, some as much as 30 feet deep, occur in sections 29, 30, and 31 along the edge of the moraine and in places apparently extend under it.

Good supplies of hard water may be obtained from wells in this gravel at depths of 10 to 20 feet. In these wells the water rises to an elevation of about 2,765 feet. They need periodical cleaning, however, to keep them clear of sand. Although no wells were seen in the till of the terminal moraines in this township, it contains much sand and gravel and should furnish a small supply of hard and perhaps alkaline water from shallow wells.

A good supply of soft water under good pressure is reasonably assured from bedrock throughout the township. Wells in it are from 40 to 170 feet deep, averaging about 100 feet. Three wells, arranged in a row between sections 2 and 32, obtain their water from an aquifer at an elevation of about 2,655 feet. In these wells the water rises to about 2,740 feet. There are several flowing wells producing soft water near a hill in section 36 and it should be possible to obtain soft water at shallow depths anywhere in the vicinity of this section.

Township 35, Range 20. The main feature of this township is Big Valley Creek, which flows southwest through a flattish valley nearly a mile wide. Bedrock is thinly covered by ground moraine, gravel, or a few inches of sod. The principal gravel deposits are in sections 3 and 4. The remainder of the township is covered with terminal moraines showing the characteristic knob and kettle topography, with the exception of two areas in the northwest corner where the higher ground is covered with ground moraine. Bedrock rises steeply on both sides of Big Valley and is nowhere far below the surface, indeed it outcrops in sections 6 and 7.

A number of shallow wells draw their water from the gravel deposits just south of the town of Big Valley. The water is hard, but the supply is good and rises high in the wells. Gravel deposits above the level of the valley floor in sections 3 and 4 may contain some water, but it will be under little or no pressure. Elsewhere in the township a few wells obtain their water from the glacial drift. The water is almost always hard and sometimes alkaline, and the supply uncertain, although in some instances it appears to be good.

Practically everywhere throughout the township bedrock may be relied upon to furnish a good supply of water that is, with few exceptions, soft. Near the town of Big Valley soft water is found at elevations of around 2,570 to 2,600 feet, and rises to about 2,700 feet in the wells. Southeast of Big Valley soft water under moderate pressure can usually be found at elevations of 2,660 to 2,680 feet. The depth of the wells will vary with the elevation at the surface but should seldom be over 120 feet.

Northwest of Big Valley the water supply is more varied. In the northwest sections a few springs with good supplies of hard water occur along the sides of valleys at elevations of 2,740 to 2,830 feet. Wells vary greatly in depth, the deepest noted being 336 feet. This particular well, however, went through a soft water aquifer at a depth of about 220 feet. The water may be hard or soft, the hard water aquifers generally being above 2,650 feet. The supply, particularly in the soft water wells, is generally good, and in most cases the water rises a fair distance in the wells.

Township 36, Range 17. Gough Lake, the principal topographic feature, covers about 3 square miles of the southwestern corner of the township. To the east of this is an area of about 9 square miles covered by wind-blown and lake sand to a depth in places of a little over 20 feet. The remainder of the township is covered by a layer of ground moraine seldom more than 5 to 20 feet deep, through which bedrock outcrops at many points controlling the topography. The land surface has a low relief and a general easterly rise away from Gough Lake.

None of the wells seen was in surface material, but it should be possible to obtain water from the sand deposits in the southwest. The supply would probably be fair but the water hard and, as bedrock is nowhere very deep, it would seem more advisable to seek for a water supply in it. In the ground moraine areas the bedrock is the only practical source of water.

Bedrock in this township seems to contain many small aquifers, any one of which will yield an abundant supply of soft water, rather than any one persistent aquifer. Wells range to 200 feet deep, with the average about 80 feet. One well is 400 feet deep, but this depth was probably unnecessary.

The water in the bedrock aquifers is under considerable pressure throughout the township. It rises highest in the east and flowing wells occur in sections 14 and 22 at elevations of about 2,735 feet. In the northwest it rises to about 2,710 feet and elsewhere seldom to less than 2,695 feet. Water may be expected to rise nearly to the surface in sections 1, 2, 23, and 27.

Township 36, Range 18. Except for several small pockets of sand and about 5 square miles of terminal moraine in the northwest corner, the township is covered with a layer of ground moraine rarely more than 10 or 15 feet thick. Drift in the knob and kettle area in the northwest corner is probably somewhat thicker. Bedrock outcrops at a number of places.

There is a little likelihood of obtaining a good supply of water from glacial till in the township except from some of the pockets of sand that are, in places, interbedded with it. Two wells in section 2 derive a good supply of hard water from such pockets.

Except for the two noted above, all wells in the township derive their water from bedrock. In the ground moraine areas the wells are as much as 190 feet deep and in the knob and kettle areas 90 to 200, with an average depth of about 80 feet in the former and 145 feet in the latter. Most of the wells obtain their water from aquifers between 2,620 and 2,680 feet. In section 6, however, two flowing wells obtain their water at an elevation of about 2,735 feet, in section 30 some wells derive their supply at about

2,580 feet, and in section 4 at about 2,690 feet. The water is under fair pressure throughout the township and rises to elevations of between 2,700 feet and 2,765 feet, the higher figure being to the west. Exceptions are the two flowing wells mentioned above, and section 30 and part of section 31 where water rises to 2,670 feet.

All the bedrock wells have medium to soft water, the former from the shallower wells. In one or two shallow wells the water is rather alkaline, but better water could be found at a slightly greater depth. In most wells the supply of water is reasonably good, and in the few exceptions a better supply could no doubt be found if the well were a little deeper.

Township 36, Range 19. Most of the township is covered with terminal moraines showing the characteristic knob and kettle topography. The strongest development of these features is along a thinly populated belt trending northeast through the center of the township, where some of the hills are over 100 feet high. In the northwest corner of the township, in the vicinity of Lowden Lake, the surface material consists of ground moraine overlain by glacial lake sand. This sand has been blown south and east to cover a considerable area of terminal moraine to a depth of 5 or 10 feet in places. The southeastern corner of the township and the floor of Big Valley, which crosses it, are both thinly covered by ground moraine through which bedrock outcrops in many places.

The surface deposits of the township cannot be relied upon to furnish a good supply of suitable water. One well was seen that produced a sufficient supply of hard water from the deposit, and some water might be found in the sand areas in the northwest part of the township.

The supply in bedrock is probably everywhere adequate and the water soft. The average depth of the wells is about 110 feet, the deepest 240 feet. The depth to which a well must be driven depends in part on whether it is located on the summit of a knob or the floor of a kettle.

No continuous aquifers exist in the bedrock underlying this township. Water may usually be obtained from small aquifers between 2,646 and 2,848 feet, and particularly between 2,646 and 2,716 feet elevation.

Water is under pressure throughout the township, rising to elevations of 2,880 feet in the north and 2,710 feet in the south. In the southeast corner the water rises to 2,760 feet and the presence of flowing wells nearby in the adjacent townships suggests that here, too, they may be found. There is little information on conditions ov r the southwest part, but they are probably similar to those elsewhere in the township, except that wells may have to be somewhat deeper. In Big Valley, however, water is probably not far below the surface.

The water in Lowden Lake is alkaline, but that from bedrock is everywhere soft and of good quality.

Township 36, Range 20. The main topographic feature of the township is Big Valley Creek that flows southeasterly along a valley of low relief nearly a mile wide, with gently sloping walls as much as 300 feet high. The floor of the valley is covered with deposits of gravel, sand, and ground moraine, as indicated on the map. Bedrock is nowhere very deep along the valley, and outcrops in many places, particularly in sections 29, 30, and 32, where it is exposed by gullies. The rest of the township, except for some ground moraine covering high parts in the southwest, is covered by terminal moraine.

Northeast of Big Valley Creek the surface of this moraine is very uneven, with hills rising to over 100 feet. West of Fenn the moraine is covered with wind-blown sand in many places. Southwest of Big Valley Creek where bedrock rises some 300 feet above the valley floor, the surface of the terminal moraines is very uneven with hills over 100 feet in height. The thickness of this material decreases to the west and in sections 6 and 7 the terminal moraine is mainly confined to valleys.

Although no wells in them were seen, the sand covering the moraine in the northern part of the township and the gravels in Big Valley might give fair supplies of water in some places. The unconsolidated

deposits over the rest of the township are unlikely to be a satisfactory source of water. There should, however, be little difficulty in obtaining a good supply of medium to soft water from bedrock anywhere in the township. The wells vary greatly in depth, depending largely upon their position on lower or higher ground in the moraine areas. The deepest well is 260 feet, and the average depth about 110 feet. Northeast of Big Valley most wells obtain their water from aquifers between 2,670 and 2,700 feet elevation, and southwest of the valley from between 2,800 and 2,850 feet, with a few higher or lower. The water is under some pressure and in most wells rises to between 2,700 and 2,770 feet northeast of the valley and 2,830 and 2,870 feet southwest of it.

Township 37, Range 17. About 5 square miles of this township is covered by Shooting and Marion (Island) Lakes. The rest, with the exception of 5 square miles overlain by lake or wind-blown sands, is covered by a mantle of ground moraine rarely more than 10 or 15 feet deep. Bedrock outcrops at many places in the west. The surface, especially in in the south, is generally even.

Except for the deposits of sand, from which several wells obtain water, there is little probability of obtaining a good supply from the drift in this township. The sand deposits generally contain good supplies of hard water. South of Shooting Lake the water in the sand is probably directly connected with that in the lake, the water of which shows little alkalinity.

Most wells in the township, whether drilled or dug, draw their water from bedrock at depths of up to 185 feet, with an average of about 75 feet. Any water deeper than about 40 feet should be fairly soft. No continuous aquifer was noted, but many of the wells draw their water from between 2,600 and 2,625 feet, and between 2,695 and 2,725 feet. The water rises to about 2,695 feet elevation near the centre of the township, and somewhat higher towards the boundaries.

The water obtained from bedrock is in good supply and, except in a few

shallow wells, medium hard to soft. There is little doubt that good water may be obtained at moderate depth.

Township 37, Range 18. The waters of Lonepine and Marion (Island) Lakes cover about 6 square miles of this township. Except for about 3 square miles in the southwest corner covered by terminal moraines showing knob and kettle type topography, the rest of the township is covered with a thin layer of ground moraine. This material is seldom more than 10 or 15 feet thick, and over a large area, between the two lakes, bedrock outcrops or is not more than 2 or 3 feet below the surface. This region is dry and thinly populated. Except for the knob and kettle area in the southwest, there are few hills and the topography mainly reflects bedrock.

Save for two doubtful cases, all the wells derive water from bedrock. Except in the knob and kettle area the unconsolidated deposits are too thin to offer much hope of a good supply of water and any found will be hard.

The average depth of well in the knob and kettle area is 150 feet, and over the rest of the township about 90 feet. The deepest well noted is 250 feet deep but derives its water from a depth of about 185 feet. Soft water is obtained between elevations of 2,630 and 2,705 feet, but above 2,700 feet the water is likely to be hard. The water is under considerable pressure and in most wells rises to between 2,745 and 2,765 feet, the highest rise being in the west.

Except for three wells the supply is generally good. One of these wells, in section 7, is at present drawing water from an aquifer higher than that of the surrounding wells, and could probably get an ample supply at greater depth. The reason for the poor supply in the other two, in sections 17 and 18, is less obvious. Because the aquifers dip west, however, better supplies should be found at only slightly greater depth. No wells were seen in the areas of bedrock outcrops, but little trouble should here be experienced in obtaining good supplies of soft water at reasonable depth.

Township 37, Range 19. Lowden Lake, the waters of which are somewhat alkaline, covers about 2 square miles in the southwest corner of the township. Ground moraine overlies the central 11 square miles; thinly in the northeast, where bedrock outcrops in many places, and more thickly in the west, where drift is as much as 40 feet thick near Ross Lake. In the west and southeast, areas totalling 8 square miles are covered with terminal moraines showing the characteristic knob and kettle topography. Along its western and southern borders the ground moraine is thinly covered by glacial-lake sand redistributed by the wind.

Most of the area has low relief, but near Lowden Lake and in the southeast of the township the morainal hills may reach a height of over 100 feet above the surrounding country. In sections 13 and 14 the drift is dissected and bedrock exposed by gullies.

A few wells derive hard water from the unconsolidated deposits. The supply is poor in the ground moraine but may be better in the sandy areas, and scattered pockets of outwash gravel at times give good supplies.

A good supply of soft water is obtained from wells in the bedrock. In the few instances where the supply is poor or the water hard this may be rectified by deepening the well slightly. Nearly all the soft water apparently comes from several aquifers, at elevations between 2,645 and 2,715 feet, that dip southwest at about 15 feet to a mile, with about four or five wells in each aquifer. The average depth of the wells over most of the township is 75 feet, with about 120 feet in the terminal moraine areas; 191 feet was the deepest well noted. The water is under some pressure and, over most of the township, rises to between 2,720 feet and 2,740 feet.

It should be possible to obtain good supplies of soft water at reasonable depth anywhere in the township.

Township 37, Range 20. The principal topographic feature of the township is Ewing Lake, an extension of Big Valley, which occupies about

1 square mile of the southwest corner. This lake has been known to go practically dry. About twelve sections in the southern part of the township are covered to a depth of over 30 feet by terminal moraines with the typical knob and kettle topography with hills as much as 75 feet high. The remainder of the township is covered by gently rolling ground moraine, in most places 30 feet or more thick. In the northern half of the township the ground moraine is covered with a variable thickness, as much as 30 or 40 feet in places, of glacial-lake sand containing some clay and silt. The sand, particularly in the lower areas, has been somewhat redistributed, especially round the margins, by wind. The sand areas are typically wooded, with low hills and many sloughs.

It is improbable that satisfactory water supply exists in the terminal and ground moraine but the sand areas in many places, especially in the north, contain very large supplies of hard water at shallow depth.

Bedrock throughout the township furnishes a good supply of soft water, especially from the deeper aquifers. The aquifers are discontinuous and most of those tapped are between elevations of 2,645 and 2,690 feet. The average depth of the wells is 115 feet, but several are over 200 feet. Mostly the wells are shallower in the southern part of the township and deeper in the northwest. In general, the deeper a well the softer the water. Most of the wells with an inadequate supply could improve it by going slightly deeper. In most cases the water is under pressure and rises in the wells.

To summarize, there is a good supply of soft water at reasonable depths throughout the township, and over most of the sand covered area there is also a good supply of hard water at shallow depth.

Township 38, Range 17. The entire surface of this township is covered with ground moraine, except where certain streams have cut through it to expose bedrock. The till forming the ground moraine is whitish grey in colour, and is composed of a sticky, sandy clay with a few

scattered stones. It is seldom thick, rarely over 5 feet, and the topography reflects the underlying bedrock. The surface is generally flat and rises towards the south, where bedrock ridges cause some broad, gentle slopes. There is little probability of obtaining a good supply of water in this till.

Owing to the downward slope of the land surface to the north and the upward slope of bedrock in the same direction, aquifers in bedrock that supply water to wells in the south are eroded away in the north. Wells in the north, consequently, have to obtain their water from lower horizons in the Edmonton and, as these are below the most suitable part of that formation, water supply in the north part of this township is less assured than elsewhere.

The average depth of the wells in the township is about 100 feet, but some wells are as deep as 202 feet. Water is obtained between elevations of 2,475 and 2,725 feet, but mostly between 2,530 and 2,610 feet. In most wells the supply is fairly good but in a few wells, including some of the deeper ones and particularly those in the northern part of the township, the supply is insufficient. In the deeper wells and those drawing water from low elevations it is doubtful if deepening will affect much improvement in the supply, as the lower part of the Edmonton formation rarely contains much water.

Water in the deeper wells is soft, unless contaminated by near-surface water. It is under considerable pressure, the rise varying from elevations of about 2,740 feet in the south and southwest to about 2,600 feet in the north.

A good supply of soft water is to be expected at reasonable depths in the southern parts of the township and also, but with less certainty, in the north.

Township 38, Range 18. The entire township, except the part occupied by Lonepine Lake in the southwest corner, is covered with a mantle of ground moraine seldom more than 5 or 6 feet thick in the south, but

increasing towards the centre and north to 20 or 30 feet in places. The surface is relatively even over most of the township, with a few shallow stream gullies, but in the centre has a few low hills. Generally it reflects the underlying bedrock. There is a general slope from elevations of around 2,800 feet in the south to 2,625 in the north. Farming is actively pursued throughout the township, which is well populated.

A few wells obtain hard water from unconsolidated deposits. Except where a pocket of gravel is encountered the supply is not always sufficient. The probability of obtaining a good water supply from these deposits, especially where they are thin, is slight, but water from them may be used to supplement a supply from bedrock where that has proved insufficient.

As in the case of the last township described, the surface elevation falls towards the north, and wells in the northern part of the township obtain their water from lower aquifers than those in the south. A few wells have an insufficient supply of water which can generally be improved by deepening. As the deeper wells in the north are, however, in the lower part of the Edmonton where there are a few aquifers, the further deepening of a deep well there, whose water supply is scanty, may not result in increased supply. The average depth of wells in the township is 100 feet, those in the north being 30 or 40 feet deeper than those in the south, and the deepest well seen was 220 feet.

In sections 1 to 12 most wells derive their water from elevations between 2,680 and 2,715 feet; in sections 15 to 24 from 2,610 to 2,675 feet; and in sections 25 to 36 from below 2,600 feet elevation, and, in some instances, as low as 2,435 feet. The water in practically all wells rises a good distance, and is generally soft.

Except for the northern part of this township, it should be possible to obtain adequate supplies of soft water at fairly reasonable depth.

Township 38, Range 19. With the exception of a couple of areas of low terminal moraine in the northwest and a few small patches of glacial-lake

sand, the entire township is covered with ground moraine composed of greyish white till. The unconsolidated deposits are thin in the southeast where bedrock outcrops or is within 3 or 4 feet of the surface over an area of about 4 square miles. They are generally 20 or 30 feet thick over most of the remainder of the township except for the southwest corner where they are as much as 40 feet.

The surface of most of the township is fairly even, with some gentle hills and undrained hollows. In the southeast there are some low hills of bedrock with a thin covering of glacial drift, and in the west and northwest a modified form of knob and kettle terminal moraine.

Very few wells in this township obtain their water from unconsolidated deposits and this is always hard. Some of the sand areas may give fair supplies, but moraine areas are unlikely to do so.

Practically all the bedrock wells in this township produce good supplies of soft water, and most of those that do not could probably find it at slightly greater depth. In the northeast of the township, however, where wells are already drawing water from horizons low in the Edmonton, deepening may not have the desired effect. Indeed one well has been sunk to 300 feet without finding much water in the lower 205 feet.

The average depth of bedrock wells is about 85 feet; slightly more in the north and less in the south. Over most of the township wells obtain their water between 2,630 and 2,700 feet elevation, except in sections 25, 26, 27, 33, 34, 35, and 36 where the surface of the land is lower and wells must go to elevations of between 2,560 and 2,600 feet or lower. The water is mostly under considerable pressure rising to an elevation of about 2,640 feet in wells in the northeast where the surface of the land is low, and to about 2,760 feet in the southwest where it is higher. The average rise in the southeast and centre is to about 2,715 feet.

In general, good supplies of soft water can be obtained at reasonable depth everywhere in this township except, perhaps, in the northeast.

Township 38, Range 20. The surface of this township is mostly gently rolling with hills 10 or 15 feet high, and has a gentle slope down to the north. Most of the valleys are drained, but there are a few small lakes in the east and south.

Most of the township is covered by gently rolling ground moraine except for about 2 square miles of terminal moraine in sections 13, 23, 24, and 25, that show knob and kettle topography in very modified form. Over some 20 square miles the ground moraine is covered with lake and outwash sands reworked by the wind, being blown off some areas and deposited in hollows in the moraine mainly farther south. In most places the drift is over 30 feet thick except in the northeast where its thickness may be only 4 or 5 feet.

The glacial-lake sand, particularly where it has collected in hollows in the underlying ground moraine, generally yields good supplies of hard water, but the till is unlikely to provide a satisfactory source of water.

The average depth of the bedrock wells is about 85 feet, the deepest well seen being 180 feet. Except for a few of the shallower wells all have good supplies of soft water.

Wells in the northern part of the township, owing to the slope in that direction of the land surface, draw water from lower aquifers than those in the south and obtain their water between 2,545 and 2,560 feet elevation. Over the rest of the township there are several aquifers between elevations of about 2,600 and 2,690 feet, some of which, in the east of the township, are associated with coal seams.

The water rises within 10 or 20 feet of the surface in most of the wells; in the south to an elevation of about 2,725 feet and in the north to about 2,650 feet. In general, ample supplies of good water may be found at reasonable depth anywhere in this township.

ANALYSES OF WELL WATERS FROM **Townships 35-38, ranges 17-20, West of 4th Meridian, Alberta.**

Sample Number	¼	Section	Township	Range	Meridian	Owner	Depth of well (feet)	* Aquifer	Total dissolved solids (parts per million)	Constituents as Analysed (parts per million) Caloium (Ca)	Magnesium (Mg)	Alkalis (as Na)	Sulphate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Bicarbonate (HCO_3)	Alkalinity (as $CaCO_3$)	Hardness as ($CaCO_3$) (pts. per million) Ca hardness	Mg hardness	Total hardness
6	SE	20	35	18	4	A. Beringer	170	E	1052.0	6.9	1.5	401.6	163.4	26.0	Nil	804.2	712.0	14.7	6.2	20.9
7	SW	2	35	19	4	W.H. Wilkie	160	E	1384.0	10.1	4.2	502.0	358.9	7.5	3.5	824.7	828.0	25.2	17.3	42.5
16	NW	16	35	20	4	T. Skarra	165	E	2152	31.3	10.1	756.5	494.0	11.5	Nil	1554.0	1283.0	78.3	41.4	119.7
5	NW	2	36	17	4	E.W. Riggins	120	E	1658.0	15.5	2.6	646.0	2.5	104.9	5.3	1598.2	1319.0	38.7	10.7	49.4
4	NW	14	36	17	4	C.E. Longshore	66	E	1750.0	8.5	3.5	640.8	234.2	10.8	5.3	1085.8	1406.0	21.2	14.4	35.6
8	SE	20	36	17	4	J. Starling	91	E	1768.0	16.0	2.2	684.4	0.8	204.5	Nil	1476.2	1289.0	32.4	9.1	41.5
9	NW	6	36	18	4	F. Bertwell	20	E	1386.0	13.7	3.5	511.2	329.6	9.0	Nil	856.2	812.0	39.2	14.4	53.6
10	SW	2	36	19	4	G.D. Robinson	85	E	1142.0	8.7	5.2	403.6	103.3	8.6	7.1	874.7	927.0			
17	SW	14	36	20	4	G. Bentley	22	E	2340	26.9	5.5	856.5	593.0	8.2	Tr	1569.0	1301.0	67.3	22.6	89.9
15	SW	20	37	19	4	L. Hennel	100	E	1372.0	11.4	2.6	501.2	209.1	Nil	Tr	1090.7	960.0			
14	NW	28	37	19	4	Alex Hennel	72	E	1538.0	14.0	2.8	586.0	451.0	Nil	2.7	929.6	781.0			
31	SE	36	37	20	4	M.J. Hennel	80	E	1210.0	14.6	3.71	431.5	323.0	0.6	1.77	773.5	640.0	36.4	15.30	51.70
2	SE	4	38	17	4	Blackmore	120	E	2216.0	20.1	8.74	762.0	105.6	7.5	7.08	522.2	602.0	50.0	36.0	86.0
11	NE	6	38	17	4	G. Taggart	202	E	1764.0	7.8	29.1	626.0	38.3	572.9	Tr	402.6	810.0			
3	SE	12	38	18	4	Solvason	100	E	1196.0	31.8	15.3	394.0	264.6	9.0	33.9	873.5	794.0	79.3	63.0	142.3
12	SE	30	38	18	4	Erickson	80	E	1324.0	16.5	4.2	456.8	472.8	Nil	Tr	645.5	550.0			
13	NE	4	38	19	4	A. Sivacoe	80	E	1284.0	20.8	8.1	408.8	349.4	Nil	23.0	761.3	630.0			
1	SE	5	39	19	4	?	?	?	966.0	4.5	1.75	351.0	138.7	2.8	Tr	776.0	696.0	11.0	7.2	18.2

* Symbols used for aquifers

NO. 669

R 7328

WELL RECORDS—~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of 4th Meridan, Alberta.

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	SE	2	35	17	4	Drilled	144	2796	-55	2741	144	2652	Edmonton	Soft		D.S.	Good supply.
2	NE	2	"	"	"	"	160	2764			160	2604	"	"		D.S.	" "
3	NW	4	"	"	"	"	120	2783	-80	2703	120	2663	"	Very hard, iron		S.	Good supply. Not fit for human consumption.
4	NW	6	"	"	"	Dug	25	2739	-15	2724	25	2714	Recent? Sand.	Hard, Alk.		S.	Good supply.
5	SE	10	"	"	"	Drilled	80	2775			80	2695	Edmonton	Soft, iron		D.S.	" "
6	SW	12	"	"	"	Drilled	100	2789	-38	2751	100	2689	"	" , "		D.S.	" "
7	SE	14	"	"	"	"	160	2768	-30	2738	160	2608	"	Soft, yellow	41	D.S.	" "
8	SE	18	"	"	"	"	125	2787	-60	2727	125	2662	"	Soft		D.S.	" "
9	NW	18	"	"	"	Dug	20	2745	-17	2728	20	2725	Recent, Sand	Hard		D.S.	" "
10	NE	18	"	"	"	Drilled	106	2757	-30	2727	106	2651	Edmonton	Soft		D.S.	" "
11	NE	19	"	"	"	Dug	30	2776	-15	2761	30	2746	Edmonton	Soft		N.	" "
12	NW	20	"	"	"	"	20	2797	-15	2782	20	2777	Recent? Sand	Hard		D.S.	Poor supply.
13	SE	22	"	"	"	Drilled	78	2741	-16	2725	78	2663	Edmonton	Medium		D.S.	Good supply.
14	NW	22	"	"	"	"	90	2735	-25	2710	90	2645	"	Soft		D.S.	" "
15	NE	23	"	"	"	Spring	0	2724			0	2724	Edmonton?	Hard, Alk.		S.	Sufficient
16	NW	24	"	"	"	Drilled	106	2724	-7	2717	106	2618	Edmonton	Medium		D.S.	Good supply.
17	SW	28	"	"	"	Dug	70	2761			70	2691	"	"		N.	Well now caved in.
18	NE	30	"	"	"	Bored	87	2744			87	2657	"	Soft, iron		D.S.	Good supply.
19	NW	31	"	"	"	Drilled	180	2735	-80	2655	90	2645	"	" "		D.S.	Poor supply.
20	SE	32	"	"	"	Dug	30	2733	-26	2707	30	2703	Glacial, contact?	Very hard		D.S.	" "
21	NW	32	"	"	"	Drilled	98	2728	-19	2709	98	2630	Edmonton	Soft, milky		D.S.	Good supply.
22	NE	32	"	"	"	"	101	2721	-19	2702	101	2620	"	Soft, iron		D.S.	" " .
23	NW	34	"	"	"	Dug	18	2712	-16	2696	18	2694	Recent?-sand	Very hard		D.S.	" " .
1	SW	2	35	18	4	Dug	48	2754	-44	2710	48	2706	Edmonton	Hard, Alk.		S.	Sufficient.
2	SW	2	"	"	"	Drilled	229	2754	-40	2714	229	2525	"	Soft		D.S.	"
3	SE	6	"	"	"	"	125	2711			125	2586	"	"		D.S.	Good supply.
4	NE	7	"	"	"	"	109	2745	-22	2723	105	2640	"	"		D.S.	" "
5	SE	12	"	"	"	Dug	20	2743	-17	2726	20	2723	Recent?-sand	Hard		D.S.	Sufficient
6	SE	16	"	"	"	Drilled	85	2737	-25	2712	85	2652	Edmonton	Soft, Iron		D.S.	Good supply.
7	NE	16	"	"	"	Drilled	86	2733	-20	2713	86	2647	"	" "		D.	" "
8	NE	16	"	"	"	Dug	25	2733	-15	2718	25	2708	"	Hard		S.	Sufficient
9	SW	18	"	"	"	Spring	0	2722			0	2722	"	Soft		D.S.	Good supply.
10	SE	20	"	"	"	Drilled	170	2797	-12	2785	170	2627	"	Soft, Iron	42	D.S.#	" " .
11	SW	31	"	"	"	Drilled	86	2762			86	2676	Edmonton	Soft		D.S.	" " .
12	SW	31	"	"	"	"	103	2778			103	2675	Edmonton	"		D.S.	" " .
13	NW	32	"	"	"	"	62	2756	0	2756	62	2694	"	"		D.S.	" " .
14	SE	34	"	"	"	"	84	2747	-22	2725	84	2663	"	"		D.S.	Very good supply.
15	NE	34	"	"	"	"	100	2750			100	2650	"	"		S.	Poor Supply.
1	SW	2	35	19	4	Drilled	160	2816	-80	2736	160	2656	Edmonton	Medium	42	D.S.#	Good supply.
2	SE	10	"	"	"	"	110	2768	-30	2738	110	2658	"	"		D.S.	" " .
3	NE	18	"	"	"	Dug	16	2794	-8	2786	16	2778	Glacial-sand	Hard		N.	" " .
4	SW	20	"	"	"	Drilled	40	2780	-3	2777	40	2740	Edmonton	Soft		D.S.	" " .
5	NW	22	"	"	"	"	160	2769			160	2609	"	"		D.S.	" " .
6	NE	30	"	"	"	Dug	15	2774	-11	2763	15	2759	Glacial. Outwash Gravels	Very Hard		D.S.	Good supply. Several wells of same type.
7	SW	32	"	"	"	Drilled	105	2761	-20	2741	105	2656	Edmonton	Soft		D.S.	Good supply.
8	SE	32	"	"	"	Dug	12	2765	-1	2764	12	2753	Glacial. Outwash	Hard		N.	Very good supply.
9	SE	34	"	"	"	Drilled	90	2791			90	2701	Edmonton (Gravels	Soft		D.S.	Good supply.
1	SW	3	35	20	4	Drilled	102	2740	-40	2700	102	2638	Edmonton	Soft		D.S.	Good supply.
2	SE	6	"	"	"	"	155	2722	-75	2647	155	2567	"	"		D.S.	" " .
3	NW	6	"	"	"	"	230	2722	-100	2622	230	2492	"	"		D.S.	" " .

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of Townships 35-38, Ranges 17-20, West of the 4th Meridian, Alberta.

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
4	SW	12	35	20	4	Drilled	111	2788	-22	2766	111	2677	Edmonton	Soft		D.S.	Good supply. Artesian hard water at 70'.
5	NW	16	"	"	"	"	165	2944	-90	2854	165	2779	"	Very hard	42	D.S.#	Good supply.
6	SW	20	"	"	"	"	135	2849			135	2714	" ?	Hard		D.S.	" " .
7	SE	20	"	"	"	"	336	2835	-180	2655	336	2499	"	"		D.S.	" " .
8	NW	20	"	"	"	"	165	2813	-90	2723	165	2648	"	Soft		N.	" " .
9	NW	21	"	"	"	Spring	16	2834			0	2834	"	Hard, Sulphur		S.	Good supply. Water on top of coal. Also 150' Dry hole.
10	SE	22	"	"	"	Dug	15	2705	-1	2704	15	2690	Glacial?gravel	Hard		D.S.	Good supply. 6 wells the same.
11	NW	23	"	"	"	"	14	2711	-10	2701	14	2697	Edmonton?	"		D.S.	" " .
12	NE	25	"	"	"	Drilled	90	2758			90	2668	Edmonton	Soft		D.S.	" " .
13	NE	26	"	"	"	"	127	2728	-30	2698	127	2601	"	"		M.	" " .
14	NE	26	"	"	"	"	187	2725	-30	2695	150	2575	"	"		D.	" " .
15	SW	27	"	"	"	"	220	2837	-60	2777	220	2617	"	"		D.	Sufficient.
16	NW	27	"	"	"	Dug	20	2860	-15	2845	20	2840	Glacial-moraine	Very hard iron		D.	Poor supply.
17	SW	28	"	"	"	Spring	8	2825			0	2825	Edmonton	Hard, Alk.		S.	Good supply.
18	SW	30	"	"	"	Dug	7	2747	-3	2744	7	2740	" ?	Very hard Alk.		D.S.	Good supply. Glacial contact.
19	NE	30	"	"	"	Drilled	150	2840			-150	2690	"	Soft		D.S.	Good supply.
20	SE	31	"	"	"	Spring	0	2749			0	2749	"	Medium		D.S.	Good supply. 6 springs; on top of coal.
21	SE	32	"	"	"	Drilled	245	2907			-245	2662	"	Hard		D.	Poor supply.
22	NW	32	"	"	"	"	155	2844	-110	2734	155	2689	"	"		D.S.	Sufficient.
23	SW	36	"	"	"	"	230	2778	0	2778	230	2548	"	Soft		D.S.	Good supply.
24	SE	36	"	"	"	"	80	2752			80	2672	"	"		S.	Good supply formerly, well now filling with sand.
1	SE	1	36	17	4	Spring	0	2716			0	2716	Edmonton	Soft		D.S.	Good supply.
2	NW	2	"	"	"	Drilled	120	2709	-5	2704	120	2589	"	"	39	D.S.#	" " .
3	SW	12	"	"	"	Dug	45	2723	-25	2698	45	2678	"	"		D.S.	" " .
4	SE	12	"	"	"	"	65	2734	-35	2699	65	2669	"	Hard, Alk. Yellowish		D.S.	" " .
5	NW	14	"	"	"	Drilled	66	2714	+30	2734	66	2648	"	Soft	41	D.S.#	" " .
6	NW	16	"	"	"	"	65	2734	-20	2714	65	2669	"	Soft, iron		D.S.	" " .
7	SE	20	"	"	"	"	91	2716	-20	2696	91	2625	"	Soft, salty		D.S.	Good supply. Water under coal.
8	SE	22	"	"	"	"	160	2733	+1	2734	160	2573	"	Soft		D.S.	Good supply.
9	SW	23	"	"	"	"	65	2733	-1	2732	65	2668	"	"		S.	" " .
10	SW	23	"	"	"	Dug	35	2733	-10	2723	35	2698	"	Very hard		D.	Poor supply.
11	SW	24	"	"	"	Drilled	45	2761			45	2716	" ?	Hard, iron		D.S.	Good supply.
12	NE	27	"	"	"	"	400	2740	-4	2736	400	2340	"	Soft		D.S.	" " .
13	SW	29	"	"	"	"	200	2729	-20	2709	200	2529	"	"		D.S.	" " .
14	NW	32	"	"	"	Dug	18	2721	-8	2713	18	2703	" ?	Hard, iron		D.S.	" " .
15	NW	32	"	"	"	Drilled	50	2732	-20	2712	50	2682	"	Soft		D.	" " .
16	NW	34	"	"	"	"	65	2717	-20	2697	65	2652	"	Soft, Sulphur Brown		N.	" " .
1	SW	2	36	18	4	Dug	8	2751	-3	2748	8	2743	Recent-sand	Hard		S.	Good supply.
2	SE	2	"	"	"	"	12	2749	-1	2748	12	2737	" "	"		S.	" " .
3	NE	2	"	"	"	Drilled	187	2738	-30	2708	187	2551	Edmonton	Soft		D.S.	" " .
4	SW	4	"	"	"	Drilled	85	2780	-15	2765	85	2695	"	"		D.S.	" " .
5	NW	4	"	"	"	"	63	2752	-6	2746	63	2689	"	"		N.	" " .
6	NE	4	"	"	"	"	92	2777	-16	2761	92	2689	"	"		D.S.	" " .
7	NW	6	"	"	"	"	20	2752	+		20	2732	"	"	42	D.S.#	" " .
8	NW	6	"	"	"	Dug	10	2750	+		10	2740	"	"		N.	" " .
9	SE	10	"	"	"	Drilled	135	2744	-25	2719	135	2609	"	"		D.S.	" " .
10	NW	10	"	"	"	"	105	2745	-18	2727	105	2640	"	"		D.S.	" " .

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of the 4th Meridian, Alberta.

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
11	SW	12	36	18	4	Drilled	97	2736	-12	2724	97	2639	Edmonton	Soft		D.S.	Poor supply.
12	NE	19	"	"	"	"	96	2798	-35	2763	96	2702	"	"		D.S.	Good supply.
13	NW	20	"	"	"	"	140	2815			140	2675	"	"		D.S.	" " .
14	NW	22	"	"	"	"	90	2730	-15	2715	90	2640	"	"		D.S.	Fair supply.
15	NE	23	"	"	"	"	92	2759	-15	2744	92	2667	"	"		D.S.	Good supply.
16	NE	25	"	"	"	Dug	44	2722	-20	2702	44	2678	"	"		D.S.	Good supply. Very poor water.
17	NE	26	"	"	"	Drilled	60	2719	-10	2709	60	2659	"	"		D.S.	Good supply.
18	SE	28	"	"	"	"	70	2730	-15	2715	70	2660	"	"		D.S.	" " .
19	NW	28	"	"	"	"	119	2743	-15	2728	119	2624	"	"		D.S.	" " .
20	SW	30	"	"	"	"	156	2735	-70	2665	156	2579	"	Medium		N.	Fair supply.
21	SW	30	"	"	"	"	157	2735	-70	2665	157	2578	"	Soft	42	D.S.	" "
22	NE	30	"	"	"	"	193	2772	-100	2672	193	2579	"	"		D.S.	Good supply.
23	SE	31	"	"	"	"	140	2764	-90	2674	140	2624	"	"		D.S.	Poor supply.
24	NW	31	"	"	"	"	115	2778	-40	2738	115	2663	"	Medium		S.	Good supply.
25	NW	31	"	"	"	"	155	2788	-40	2748	155	2633	"	Soft		D.	Good supply.
26	NW	32	"	"	"	"	135	2756	-30	2726	135	2621	"	"		D.S.	Poor supply.
27	NE	33	"	"	"	"	76	2749	+14	2735	76	2673	"	"		D.S.	Good supply. 2 wells the same.
28	SW	34	"	"	"	"	90	2743			90	2653	"	"		D.S.	Good supply.
29	NW	34	"	"	"	"	83	2724	-8	2716	83	2641	"	"		D.S.	Good supply.
30	NE	34	"	"	"	Dug	22	2750	-12	2738	22	2728	"	Medium		D.S.	Sufficient.
31	SE	36	"	"	"	Drilled	55	2731	-15	2716	55	2676	"	Soft		D.S.	Good supply.
32	NW	36	"	"	"	"	60	2748			60	2688	"	"		D.S.	Poor supply.
1	SW	2	36	19	4	Drilled	85	2765	-10	2755	85	2680	Edmonton	Soft	42	D.S.#	Good supply.
2	SE	6	"	"	"	"	110	2763	-20	2743	110	2653	"	"		D.S.	" "
3	SE	10	"	"	"	Spring	0	2788			0	2788	"	", Iron		S.	" "
4	NE	11	"	"	"	Drilled	100	2780	-25	2755	100	2680	"	" "		N.	" "
5	NE	12	"	"	"	Dug	47	2761	-1	2760	47	2714	"	"		D.S.	" " Formerly flowed.
6	SW	14	"	"	"	Drilled	125	2841	-25	2816	125	2716	"	" "		N.	" "
7	SE	14	"	"	"	"	126	2799	-35	2764	126	2673	"	" "		D.S.	Very good supply.
8	SW	20	"	"	"	"	42	2834	-4	2830	42	2792	Glacial-Moraine?	Hard		D.S.	Good supply.
9	NW	21	"	"	"	"	115	2854	-15	2839	115	2739	Edmonton	Soft		D.S.	" "
10	NE	22	"	"	"	"	242	2939	-10	2929	242	2697	"	"		N.	Goes through much quicksand.
11	NE	23	"	"	"	Spring	0	2858			0	2858	"	Medium		N.	Fair supply.
12	NW	24	"	"	"	Drilled	147	2793	-80	2713	147	2646	"	Soft		D.S.	Good supply.
13	SW	25	"	"	"	"	190	2890	-125	2765	190	2700	"	"		D.S.	" "
14	NW	27	"	"	"	"	98	2750	-22	2728	98	2652	"	"	42	D.S.	" "
15	NW	28	"	"	"	"	115	2775	-40	2735	115	2660	"	"		D.S.	" "
16	SE	29	"	"	"	"	112	2884	-5	2879	112	2772	"	"		D.S.	" "
17	NE	30	"	"	"	"	140	2815	-8	2807	140	2675	"	"		D.S.	" "
18	SW	35	"	"	"	Dug	16	2790	-6	2784	16	2774	"	"		D.S.	" "
19	NW	36	"	"	"	Dug	40	2888	-26	2862	40	2848	"	"		D.S.	" "
1	SE	2	36	20	4	Drilled	32	2919	-23	2896	32	2887	Edmonton ?	Medium		D.S.	Good supply.
2	NW	5	"	"	"	"	140	2973			140	2833	"	Soft		N.	
3	NE	10	"	"	"	Dug	12	2865	+2	2867	12	2853	"	"		D.S.	Fair supply.
4	SW	12	"	"	"	Drilled	125	2795	-50	2745	125	2670	"	", Iron		D.S.	Good supply.
5	SW	12	"	"	"	Spring	0	2769	0	2769	0	2769	" ?	Hard		S.	Good supply.
6	SW	14	"	"	"	Dug	22	283?	-1	2831	22	2810	"	Soft, Yellow	43	D.S.#	Good supply. Water on top of coal.
7	SW	14	"	"	"	Spring	0	2833	0	2833	0	2833	"	Soft		N.	" "
8	NW	18	"	"	"	Drilled	150	2965	-135	2830	150	2815	"	"		D.S.	" "
9	SW	20	"	"	"	"	152	2951	-116	2835	152	2799	"	"		D.S.	" "
10	SE	20	"	"	"	"	110	2917	-70	2847	110	2807	"	"		D.S.	Very good supply.
11	NW	24	"	"	"	"	50	2745	-16	2729	50	2695	"	"		D.S.	Good supply.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA.

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
12	NW	24	36	20	4	Drilled	50	2741	-16	2725	50	2691	Edmonton	Soft		D.S.	Good supply.
13	NE	24	"	"	"	"	116	2800	-40	2760	116	2684	"	"		D.S.	" "
14	SW	25	"	"	"	"	77	2776	-40	2736	77	2699	"	"		D.S.	" "
15	NE	26	"	"	"	"	120	2790	-20	2770	120	2670	"	"		D.S.	" "
16	SW	28	"	"	"	"	260	2896	-60	2836	260	2636	"	"		D.S.	" "
17	NW	31	"	"	"	"	65	2745	-10	2735	65	2680	"	Medium, iron		D.S.	" "
18	SE	32	"	"	"	"	100	2774	-30	2734	100	2674	"	Soft		D.S.	" "
19	NW	32	"	"	"	"	180	2838	-140	2698	180	2658	"	Medium,iron		D.S.	" "
20	NE	32	"	"	"	"	150	2829	-120	2709	150	2679	"	" "		D.S.	" "
21	NE	33	"	"	"	"	100	2803	-50	2753	100	2703	"	Medium		D.S.	" "
22	SE	34	"	"	"	"	165	2803	-40	2763	165	2638	"	"		D.S.	Very good supply.
23	NE	34	"	"	"	"	108	2796	-52	2744	108	2688	"	Soft,iron		D.S.	Good supply.
1	NW	3	37	17	4	Dug	16	2715	-8	2707	16	2699	Glacial lake sand	Hard		S.	Very good supply.
2	SE	4	"	"	"	Drilled	110	2730	-4	2726	110	2620	Edmonton	Soft		D.S.	Good supply.
3	NW	5	"	"	"	"	120	2745	-35	2710	120	2625	"	"		D.S.	" "
4	NW	5	"	"	"	Dug	15	2729	-9	2720	15	2714	"	Hard		D.S.	Very good supply.
5	SW	6	"	"	"	Dug	20	2745	-4	2741	20	2725	"	"		D.S.	Good supply.
6	SW	12	"	"	"	Drilled	110	2817	-50	2767	110	2707	"	Medium,iron		D.S.	" "
7	SE	15	"	"	"	"	100	2715	-12	2703	100	2615	"	Soft		D.S.	" "
8	NW	22	"	"	"	"	125	2735	-20	2715	125	2610	"	"		S.	" "
9	NW	22	"	"	"	"	185	2735	-40	2695	135	2600	"	"		D.	" "
10	NW	25	"	"	"	Dug	12	2736	-4	2732	12	2724	" (?)	Hard,iron		D.S.	" "
11	SW	26	"	"	"	Bored	40	2734	-20	2714	40	2694	"	Soft		D.S.	" "
12	NE	27	"	"	"	Drilled	85	2755	-45	2710	85	2670	"	"		D.S.	" "
13	NE	28	"	"	"	Bored	35	2740	-20	2720	35	2705	" (?)	Medium		D.S.	" "
14	SE	32	"	"	"	Dug	50	2774			50	2724	"	Soft		S.	" "
15	NE	32	"	"	"	Drilled	73	2759	-18	2741	73	2686	"	Hard		D.	Fair Supply.
16	NE	32	"	"	"	"	110	2747	-30	2717	110	2637	"	Soft		S.	Good supply.
17	NW	33	"	"	"	Bored	45	2746	-25	2721	45	2701	"	"		D.S.	Poor supply.
18	SE	35	"	"	"	Drilled	80	2738	-20	2718	80	2658	"	"		D.S.	Good supply.
19	SW	36	"	"	"	Bored	33	2743	-10	2733	33	2710	"	"		D.S.	Good supply.
20	NW	36	"	"	"	Drilled	90	2749	-45	2704	90	2659	"	Medium,iron		D.S.	Very good supply.
1	SE	1	37	18	4	Drilled	85	2749	-25	2724	85	2664	Edmonton	Soft		S.	Good Supply
2	NE	1	"	"	"	Dug	12	2749	-5	2744	12	2737	" (?)	Hard		D.S.	" "
3	SW	4	"	"	"	Drilled	75	2772	-11	2761	75	2697	"	Soft		D.S.	" "
4	SW	6	"	"	"	"	250	2817	-30	2787	187?	2630?	"	Soft		D.S.	" "
5	NE	7	"	"	"	"	137	2837	-30	2807	137	2700	"	Hard		N.	Poor Supply
6	SE	9	"	"	"	"	55	2761			55	2706	"	Soft,iron		D.S.	Good Supply
7	SW	16	"	"	"	"	90	2770	-20	2750	90	2680	"	Soft		N.	" "
8	SE	16	"	"	"	"	96	2768	-20	2748	96	2672	"	Soft		D.S.	" "
9	SE	17	"	"	"	"	149	2787	-33	2754	149	2638	"	Soft		D.S.	Poor Supply
10	NE	17	"	"	"	"	86	2764	-16	2748	86	2678	"	Soft		S.	Good Supply
11	NW	18	"	"	"	"	211	2845	-60	2785	211	2634	"	Soft,iron		D.S.	Poor Supply
12	NW	18	"	"	"	"	60	2843			60	2783	" (?)	Very hard		S.	Good Supply
13	SW	33	"	"	"	Spring	0	2716	0	2716	0	2716	"	Soft		S.	" "
14	NW	34	"	"	"	Drilled	148	2791	-28	2763	148	2643	"	Medium		D.S.	" "
15	SW	36	"	"	"	"	80	2773	-60	2713	80	2693	"	Soft		D.S.	" "
16	SE	36	"	"	"	"	95	2744	-30	2714	95	2649	"	Soft		D.S.	" "

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS ~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	SW	4	37	19	4	Drilled	70	2742	-20	2722	70	2672	Edmonton	Soft		D.S.	Good Supply
2	SE	4	"	"	"	"	70	2757			70	2687	"	"		D.S.	" "
3	SW	6	"	"	"	Dug	40	2719	-5	2714	40	2679	"	"		D.S.	" "
4	SW	8	"	"	"	Drilled	78	2737	-12	2725	78	2659	"	"		D.S.	" "
5	NE	9	"	"	"	Bored	42	2738	-3	2738	42	2696	"	"		D.S.	Good Supply
6	SW	10	"	"	"	Drilled	57	2749	-12	2739	57	2692	"	"		D.	" "
7	SW	10	"	"	"	Dug	33	2746	-8	2738	33	2713	" (?)	Medium		S.	Sufficient
8	NW	12	"	"	"	Drilled	150	2704	-40	2664	150	2554	"	Soft		D.	Poor Supply
9	NW	12	"	"	"	Spring	0	2767	0	2767	0	2767	"	Soft, iron Sulphur		S.	Good Supply
10	SW	15	"	"	"	Bored	43	2743	-15	2728	43	2700	"	Soft, Sulphur		D.S.	Good Supply. Water on top of coal
11	NW	16	"	"	"	Drilled	68	2764	-20	2744	68	2696	"	Soft		D.S.	Good Supply
12	SE	17	"	"	"	Drilled	110	2756	-33	2723	110	2646	"	Soft		D.S.	Good Supply
13	NE	17	"	"	"	Dug	30	2767	-6	2761	30	2737	"	Soft		N.	Poor Supply
14	SE	18	"	"	"	Bored	42	2826	-25	2801	42	2784	Glacial Moraine	Hard, alkaline, iron		D.S.	Poor Supply
15	NW	18	"	"	"	Dug	50	2840	-35	2805	50	2790	Edmonton (?)	Hard, alkaline, Brown		N.	Fair Supply. Water on top of coal
16	NW	18	"	"	"	Drilled	191	2845	-73	2772	191	2654	"	Soft		D.S.	Good Supply
17	SW	20	"	"	"	"	100	2788	-20	2768	80	2708	"	Soft, iron	42	D.S. #	Good Supply
18	NE	20	"	"	"	Bored	63	2777	-2	2775	63	2714	"	Hard		S.	" "
19	NE	20	"	"	"	Dug	12	2777	-2	2775	12	2765	Glacial? lake sand	"		D.	Poor Supply
20	SE	21	"	"	"	Drilled	60	2794			60	2734	Glacial? Outwash Gravel	Hard, iron		D.	Very Good Supply
21	SW	22	"	"	"	Drilled	100	2783	-50	2733	100	2683	Edmonton	Medium		D.S.	Good Supply
22	NW	23	"	"	"	"	87	2746	-15	2731	87	2659	"	Soft		D.S.	Good Supply
23	NE	23	"	"	"	"	110	2811	-1	2809	110	2701	"	Soft		D.S.	" "
24	SW	24	"	"	"	Dug	35	2752	-15	2737	35	2717	Glacial lake sand?	Hard		D.	" "
25	NW	24	"	"	"	Dug	8	2739	0	2739	8	2731	Edmonton? Glacial Contact?	Hard		D.S.	" "
26	SW	26	"	"	"	Bored	70	2754	-5	2749	70	2684	Edmonton	Soft		D.S.	" " Hard upper water entering
27	SW	28	"	"	"	Drilled	65	2750	-25	2725	65	2685	"	Soft		D.S.	" "
28	NW	28	"	"	"	"	72	2748	-13	2735	72	2676	"	"	42	D.S. #	Very good Supply
29	SW	29	"	"	"	"	110	2780	-60	2720	110	2670	"	" , iron		D.S.	Good Supply
30	SE	32	"	"	"	"	80	2753	-20	2733	80	2673	"	"		D.S.	" "
31	SW	36	"	"	"	"	78	2754			78	2676	"	" , "		D.S.	" "
32	SE	36	"	"	"	"	125	2723	-25	2698	125	2598	"	"		D.S.	Sufficient
33	SE	36	"	"	"	"	65	2761	-20	2741	65	2696	"	"		D.S.	Good Supply
1	SW	1	37	20	4	Drilled	65	2742	-45	2697	65	2677	Edmonton	Medium, iron		D.S.	Good Supply
2	SW	2	"	"	"	"	95	2786	-75	2711	95	2691	"	Soft		D.S.	Good Supply
3	SW	4	"	"	"	"	100	2783	-80	2703	100	2683	"	Medium, iron		D.	" "
4	SE	4	"	"	"	"	125	2893	-60	2833	125	2768	"	Soft		D.S.	" "
5	SW	5	"	"	"	"	48	2713	-25	2688	48	2665	"	Medium, iron		D.S.	" "
6	SW	8	"	"	"	"	40	2792			40	2752	"	Soft		D.S.	" "
7	NW	8	"	"	"	"	230	2803			230	2573	"	Soft, Sulphur		D.S.	" "
8	SW	10	"	"	"	Dug	22	2746	-12	2734	22	2724	"	Medium		D.S.	" " , Several wells of same type

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—~~Rural Municipality 167~~ Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
9	NE	10	37	20	4	Dug	30	2814	-15	2799	30	2784	Glacial, Terminal Moraine	Hard		D.S.	Good Supply
10	SE	13	"	"	"	Drilled	112	2832	-30	2802	112	2720	Edmonton	Soft		D.S.	Good Supply
11	SW	15	"	"	"	"	125	2808			125	2683	"	" ,iron		D.S.	Fair Supply
12	NW	17	"	"	"	"	105	2796			105	2691	"	"		D.S.	Good Supply
13	SE	18	"	"	"	"	102	2805	-50	2755	102	2703	"	"		D.S.	" "
14	NE	18	"	"	"	Bored	33	2788	-10	2778	33	2755	"	"		D.S.	" "
15	NW	20	"	"	"	Drilled	160	2788			160	2628	"	"		D.	" "
16	SW	21	"	"	"	"	138	2788	-50	2738	138	2650	"	"		D.S.	" "
17	NW	22	"	"	"	"	120	2788	-12	2776	120	2676	"	" ,brown		D.S.	" "
18	NE	25	"	"	"	Bored	30	2770	-15	2755	30	2740	Glacial lake sand?	Hard		D.S.	" "
19	NE	25	"	"	"	"	50	2770	-30	2740	50	2720	Glacial lake sand?	"		S.	" "
20	NE	28	"	"	"	Drilled	105	2757			105	2652	Edmonton	Soft,iron		D.S.	" "
21	NE	29	"	"	"	"	140	2762			140	2622	"	"		D.S.	" "
22	SW	30	"	"	"	"	110	2790			110	2680	"	Hard,iron		D.	Sufficient Supply
23	SW	30	"	"	"	"	265	2810			265	2545	"	Soft		S.	Good Supply
24	SW	30	"	"	"	"	225	2785			225	2560	"	"		D.	" "
25	NW	32	"	"	"	Dug	50	2750	-15	2735	50	2700	" ?	Hard,iron		D.S.	Poor Supply, well filling in
26	NE	33	"	"	"	Drilled	107	2756			107	2649	"	Soft		D.	Good Supply
27	NE	34	"	"	"	"	120	2786			120	2666	"	"		D.S.	" "
28	SE	36	"	"	"	"	80	2767			80	2687	"	"		D.S.#	" "
1	SE	1	38	17	4	Dug	30	2741	-20	2721	30	2711	Edmonton	Soft		D.S.	Good Supply
2	SE	4	"	"	"	Drilled	120	2748	-12	2736	120	2628	"	"	40	D.S.	" "
3	NE	4	"	"	"	"	190	2759			190	2569	"	"		N.	Poor Supply
4	NE	4	"	"	"	Bored	34	2749	-8	2741	34	2715	"	"		D.S.	Good Supply
5	NE	5	"	"	"	Drilled	120	2727	-17	2710	120	2607	"	"		D.S.	Sufficient
6	SW	6	"	"	"	"	75	2764	-15	2749	75	2689	"	" ,iron		D.S.	Good Supply
7	NE	6	"	"	"	"	202	2735	-15	2720	202	2533	"	"	42	D.S.#	" " , Also higher water
8	NE	6	"	"	"	Dug	30	2736	-26	2710	30	2706	"	Hard		N.	Very good Supply
9	NE	8	"	"	"	Drilled	115	2692			115	2577	"	Soft		D.S.	Fair Supply
10	SW	10	"	"	"	Dug	28	2752	-8	2744	28	2724	"	"		D.S.	Good Supply
11	SE	11	"	"	"	Drilled	90	2736	-40	2696	90	2646	"	"		D.S.	" "
12	SW	12	"	"	"	Bored	67	2757	-25	2732	67	2690	"	Hard		D.S.	" "
13	NE	12	"	"	"	Drilled	146	2749	-45	2704	90	2603	"	Soft		D.S.	Good Supply
14	SE	14	"	"	"	Dug	48	2667	-16	2651	48	2619	"	Hard		D.S.	Poor Supply
15	NW	14	"	"	"	Drilled	160	2767			160	2607	"	Soft		N.	" "
16	SW	20	"	"	"	"	86	2654	-12	2642	86	2568	"	"		D.S.	Good Supply
17	NW	20	"	"	"	"	185	2661	-11	2650	185	2476	"	"		S.	Fair Supply
18	NE	20	"	"	"	"	80	2663	-40	2623	80	2583	"	" ,iron		D.S.	Good Supply
19	NE	21	"	"	"	"	90	2660			90	2570	"	"		D.S.	Sufficient
20	NW	22	"	"	"	"	95	2660			95	2565	"	"		D.	Poor Supply
21	NE	22	"	"	"	"	130	2667	-8	2659	130	2537	"	" , "		D.S.	Good Supply
22	NE	29	"	"	"	"	180	2661	-60	2601	180	2481	"	"		D.S.	" "
23	SW	31	"	"	"	Dug	32	2690	-16	2674	32	2658	Glacial-Till?	Very Hard		S.	" "
24	SW	31	"	"	"	Drilled	150	2690			150	2540	Edmonton	Soft		D.	Poor Supply
25	SE	33	"	"	"	"	85	2641	-15	2626	85	2556	"	"		D.S.	Good Supply
26	NW	33	"	"	"	Bored	45	2629	-15	2614	45	2584	" ?	Hard,iron		D.S.	" "
27	NW	34	"	"	"	Dug	60	2628	-20	2608	60	2568	" ?	Hard		D.S.	" "

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(#) Sample taken for analysis.

WELL RECORDS—~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	SW	2	38	18	4	Drilled	90	2802	-30	2772	90	2712	Edmonton	Soft		D.S.	Good Supply
2	NW	2	"	"	"	"	86	2801	-45	2756	86	2715	"	"		N.	" "
3	SE	3	"	"	"	Spring	0	2777	+2 ?	2779	0	2777	"	"		D.S.	" " , Several springs much the same
4	SW	4	"	"	"	Bored	35	2776	-20	2756	35	2741	" ?	Hard		D.S.	Poor Supply
5	SE	4	"	"	"	Drilled	75	2739	-18	2721	75	2664	"	"		S.	" " , Filling with sand
6	SE	4	"	"	"	"	75	2739	-18	2721	75	2664	"	Soft		D.	Fair Supply
7	SW	4	"	"	"	"	135	2772	-60	2712	135	2637	"	"		D.S.	Good Supply
8	NW	4	"	"	"	"	70	2771	-30	2741	70	2701	"	"		D.	" "
9	NW	4	"	"	"	"	90	2771	-20	2751	90	2681	"	Hard		D.S.	" "
10	NE	4	"	"	"	Bored	83	2782	-75	2707	83	2699	"	"		S.	Sufficient Supply
11	NE	4	"	"	"	Dug	52	2785	-45	2740	52	2733	" ?	"		D.S.	" "
12	SE	5	"	"	"	"	75	2748	-18	2730	75	2673	"	Soft		N.	Good Supply
13	SE	5	"	"	"	"	20	2748	-10	2738	20	2728	" ?	Hard		D.S.	" "
14	SE	5	"	"	"	"	8	2732	-4	2728	8	2724	"	Soft		S.	Fair Supply
15	NW	9	"	"	"	Drilled	56	2771			56	2715	"	"		D.S.	Good Supply
16	NE	9	"	"	"	"	100	2786	-20	2766	100	2686	"	"		D.S.	" "
17	SE	10	"	"	"	"	86	2795	-30	2765	86	2709	"	Medium		D.S.	" "
18	NE	10	"	"	"	"	84	2789	-45	2744	84	2705	"	Soft		D.S.	" "
19	SE	11	"	"	"	"	60	2803	-30	2773	60	2743	"	"		D.	" "
20	SE	12	"	"	"	"	100	2771	-10	2761	100	2671	"	"	42	D.S.#	" "
21	NE	13	"	"	"	"	97	2722	-12	2710	97	2625	"	"		D.S.	" "
22	NW	14	"	"	"	Dug	28	2750	-10	2740	28	2722	"	Medium		D.S.	" "
23	NW	16	"	"	"	Drilled	85	2760	-20	2740	85	2675	"	Soft		D.S.	" "
24	NE	17	"	"	"	"	60	2760	-20	2740	60	2700	"	"		D.S.	" "
25	NW	18	"	"	"	"	85	2738	-30	2708	85	2653	"	"		S.	" "
26	NW	18	"	"	"	"	115	2742	-20	2722	115	2627	"	"		D.	" "
27	NE	18	"	"	"	"	200	2736			200	2536	"	"		N.	" "
28	NE	18	"	"	"	"	75	2750	-40	2710	75	2675	"	"		D.	" "
29	SE	19	"	"	"	"	70	2704	-35	2669	70	2634	"	"		D.S.	Sufficient Supply
30	SE	20	"	"	"	"	60	2756			60	2696	"	"		D.S.	Good Supply
31	SW	22	"	"	"	"	50	2716	-25	2691	50	2666	"	"		D.S.	" "
32	NE	22	"	"	"	"	100	2730	-15	2715	100	2630	"	"		D.S.	" "
33	NW	23	"	"	"	"	107	2735	-16	2719	107	2628	"	"		N.	" "
34	SW	24	"	"	"	"	100	2716	-20	2696	100	2616	"	"		D.	" "
35	NW	24	"	"	"	"	80	2692			80	2612	"	Medium		D.S.	Poor Supply
36	NE	24	"	"	"	"	80	2666	-6	2660	80	2586	"	Soft		D.S.	Good Supply
37	NW	26	"	"	"	Drilled	180	2697	-70	2627	180	2517	"	"		D.	Sufficient Supply
38	NW	26	"	"	"	Dug	22	2693	-15	2678	22	2671	Glacial? Till	Hard, alkaline		S.	" "
39	SW	28	"	"	"	Drilled	85	2701	-80	2621	85	2616	Edmonton	Soft		D.	Poor Supply
40	SW	28	"	"	"	Bored	40	2701	-35	2666	40	2661	"	Hard		S.	Poor Supply
41	SE	28	"	"	"	Dug	30	2700			30	2670	" ?	"		S.	Fair Supply
42	SE	28	"	"	"	Drilled	100	2698			100	2598	"	Soft		D.	Poor Supply
43	NW	28	"	"	"	Dug	27	2646	-20	2626	27	2619	Glacial Outwash gravel?	Hard		D.S.	Good Supply
44	NE	29	"	"	"	"	24	2666	-20	2646	24	2642	Glacial Outwash gravel?	Hard, iron		D.S.	" "
45	SE	30	"	"	"	Drilled	80	2691	-15	2676	80	2611	Edmonton	Soft		D.	" "
46	SE	30	"	"	"	Dug	80	2691	-20	2671	80	2611	"	"		S.	" "
47	NW	30	"	"	"	Drilled	90	2677	-20	2657	90	2587	"	"		D.S.	" "
48	NE	30	"	"	"	"	127	2670	-12	2658	127	2543	"	"		D.S.	" "
49	NE	32	"	"	"	"	65	2646			65	2581	" ?	Hard		S.	" "
50	SW	33	"	"	"	Dug	25	2650	-11	2639	25	2625	" ?	"		S.	" "

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(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
51	SW	33	38	18	4	Drilled	200	2648	-45	2603	200	2448	Edmonton	Soft		D.	Poor Supply
52	NW	34	"	"	"	"	140	2672	-18	2654	90	2582	"	"		D.	Fair Supply
53	NW	35	"	"	"	"	220	2655			220	2435	"	Soft, salty		D.	" "
54	NW	36	"	"	"	"	178	2653	-35	2618	178	2475	"	Soft		D.S.	Good Supply
55	NE	36	"	"	"	"	124	2655	-30	2625	124	2531	"	" , iron		D.S.	" "
1	SE	3	"	19	4	Drilled	90	2725			90	2635	Edmonton	Soft		D.	Good Supply
2	SW	4	"	"	"	"	85	2757	-20	2737	85	2672	"	"		D.S.	" "
3	NE	4	"	"	"	"	80	2733	-10	2723	80	2653	"	"	42	D.S. #	" "
4	SW	5	"	"	"	"	80	2738	-16	2722	80	2658	"	"		D.S.	" "
5	NW	5	"	"	"	"	85	2763			85	2678	"	"		D.S.	" "
6	NW	6	"	"	"	"	63	2738	-14	2724	63	2675	"	Hard, iron		D.S.	" "
7	SW	7	"	"	"	"	103	2752	-8	2744	103	2649	"	Soft		D.S.	" "
8	NW	8	"	"	"	"	64	2766	-11	2755	64	2702	"	Soft, iron		D.S.	" "
9	NE	8	"	"	"	"	105	2748	-25	2723	105	2643	"	Soft		D.S.	" "
10	NW	9	"	"	"	"	120	2799	-25	2774	120	2679	"	Soft		D.S.	Very Good Supply
11	SE	11	"	"	"	"	57	2735	-17	2718	57	2678	"	Soft		D.S.	" " "
12	SW	12	"	"	"	"	126	2733	-15	2718	65	2668	"	"		D.S.	Good Supply
13	NW	12	"	"	"	"	65	2729	-15	2714	65	2664	"	"		S.	Very Good Supply
14	NW	12	"	"	"	"	52	2729	-12	2717	52	2677	"	"		D.	Good Supply
15	NW	13	"	"	"	Bored	22	2719	-3	2716	22	2697	"	"		D.S.	Good Supply
16	NE	14	"	"	"	Dug	22	2713	-3	2710	22	2691	"	"		D.S.	Good Supply
17	NE	17	"	"	"	Drilled	52	2731	-20	2711	52	2679	"	Medium, iron		D.S.	" "
18	SE	19	"	"	"	Drilled	80	2736			80	2656	"	Soft		D.S.	" "
19	NE	19	"	"	"	"	67	2771	-10	2761	67	2704	"	Medium		D.S.	Good Supply
20	SE	20	"	"	"	Drilled	110	2737			110	2627	"	Soft		D.S.	" "
21	SE	20	"	"	"	"	130	2762	-30	2732	130	2632	"	Soft		D.S.	" "
22	NW	20	"	"	"	"	106	2763	-48	2715	106	2657	"	Soft		D.S.	" "
23	NE	20	"	"	"	"	65	2721	-40	2681	65	2656	"	Soft, iron		S.	Fair Supply
24	SW	21	"	"	"	"	65	2721			65	2656	"	Soft		D.S.	Good Supply
25	NW	21	"	"	"	"	100	2759	-50	2709	100	2659	"	Soft		D.S.	Good Supply
26	SW	22	"	"	"	Dug	35	2697	-20	2677	35	2662	Glacial? Till	Hard		D.S.	Good Supply
27	SE	22	"	"	"	Drilled	86	2708	-15	2693	86	2622	Edmonton	Soft		D.S.	" "
28	NW	22	"	"	"	"	60	2724	-30	2694	60	2664	Edmonton	Soft		D.S.	Good Supply
29	NE	22	"	"	"	"	100	2726	-50	2676	100	2626	"	Hard		D.	Poor Supply
30	SW	24	"	"	"	"	90	2738	-22	2716	90	2648	"	Soft		D.S.	Good Supply
31	NW	25	"	"	"	"	85	2685	-30	2655	85	2600	"	Soft		D.S.	Good Supply
32	NW	26	"	"	"	"	108	2677			108	2569	"	"		D.S.	" "
33	SE	27	"	"	"	"	60	2727	-50	2677	60	2667	"	Hard		D.S.	" "
34	SE	27	"	"	"	"	80	2679	-35	2644	80	2599	"	Soft		D.	" "
35	NE	27	"	"	"	"	106	2676	-30	2646	106	2570	"	Soft		D.S.	Good Supply
36	NW	28	"	"	"	"	68	2700	-15	2685	68	2632	"	Soft		D.S.	" "
37	SE	30	"	"	"	"	131	2771	-50	2721	100?	2671?	"	"		D.S.	" "
38	NW	32	"	"	"	Bored	40	2725	-35	2690	40	2685	"	"		D.S.	" "
39	SE	34	"	"	"	Drilled	100	2667	-15	2652	100	2567	"	"		D.S.	" "
40	NW	34	"	"	"	"	60	2680			60	2620	"	"		D.S.	Poor Supply
41	NW	35	"	"	"	"	200	2656	-15	2641	200	2456	"	"		D.S.	Good Supply
42	NW	35	"	"	"	Bored	18	2656	-10	2646	18	2638	Glacial? Till?	Hard		D.	Sufficient Supply
43	SW	36	"	"	"	Drilled	300	2675	-11	2664	95	2580	Edmonton	Soft		D.S.	Fair Supply
1	NW	1	38	20	4	Drilled	54	2734	-5	2729	54	2680	Edmonton	Soft		D.S.	Good Supply
2	NW	3	"	"	"	"	100	2754			100	2654	"	Soft		D.S.	Good Supply
3	NE	5	"	"	"	Bored	45	2735	-8	2727	45	2690	"	"		D.S.	Good Supply
4	NE	6	"	"	"	Drilled	118	2726	-14	2712	118	2608	"	"		D.S.	Good Supply
5	SE	7	"	"	"	"	160	2721	-10	2711	160	2561	"	"		D.S.	Good Supply

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(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—~~Rural Municipality of~~ Townships 35-38, Ranges 17-20, West of 4th Meridian, ALBERTA

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
6	SW	8	38	20	4	Drilled	80	2723			80	2643	Edmonton	Soft		D.S.	Good Supply
7	SE	8	"	"	"	"	180	2731	-20	2711	180	2551	"	"		D.S.	" "
8	NE	10	"	"	"	"	85	2731			85	2646	"	"		D.S.	" "
9	SE	12	"	"	"	"	75	2721			75	2646	" ?	Hard, iron		D.S.	" "
10	NW	12	"	"	"	"	38	2726			38	2688	"	Hard, iron		D.S.	Good Supply. Water on coal.
11	NW	12	"	"	"	"	70	2733			70	2663	"	Medium, iron		D.S.	Good Supply
12	NE	12	"	"	"	Bored	27	2739			27	2712	"	Hard, iron		D.S.	Good Supply. Water on coal.
13	SW	13	"	"	"	Drilled	40	2730	-15	2715	40	2690	"	Medium, iron		D.S.	Good Supply. Water on coal.
14	SE	14	"	"	"	"	96	2718	0	2718	60	2658	"	Soft		D.S.	Good Supply
15	NW	17	"	"	"	Bored	50	2696	-25	2671	50	2646	Glacial? Gravel	Very Hard iron		D.S.	Good Supply
16	NW	18	"	"	"	Dug	14	2680	-11	2669	14	2666	Glacial Lake Sand	Very Hard		S.	Good Supply
17	NW	19	"	"	"	Drilled	140	2684	-20	2664	140	2544	Edmonton	Soft		D.S.	Good Supply
18	NW	20	"	"	"	Dug	10	2680	-9	2671	10	2670	Glacial Lake Sand	Hard		D.S.	Good Supply
19	SE	21	"	"	"	Dug	15	2705	-10	2695	15	2690	Glacial Lake Sand	Hard		D.S.	Good Supply
20	NW	22	"	"	"	Drilled	90	2711			90	2621	Edmonton	Medium		S.	Good Supply
21	NW	22	"	"	"	Drilled	110	2713			110	2603	"	Soft		D.	Poor Supply
22	SW	23	"	"	"	Bored	28	2705	-15	2690	28	2677	"	Soft		D.S.	Good Supply
23	SE	27	"	"	"	Drilled	76	2674	-11	2663	76	2598	"	Soft		D.S.	Good Supply
24	SW	28	"	"	"	Bored	40	2661	-10	2651	40	2621	"	Medium		D.S.	Good Supply
25	SE	28	"	"	"	Bored	40	2717	-10	2707	40	2677	"	Medium		D.S.	Good Supply
26	SW	29	"	"	"	Drilled	125	2680	-10	2670	125	2555	"	Soft		D.S.	Very Good Supply
27	SE	29	"	"	"	Bored	30	2689	-20	2669	30	2659	Glacial Lake Sand?	Hard		D.S.	Sufficient Supply
28	NE	29	"	"	"	Bored	30	2689	-12	2677	30	2659	Glacial Lake Sand	Hard		D.S.	Good Supply
29	NE	30	"	"	"	Drilled	125	2671	-12	2659	125	2546	Edmonton	Soft		D.S.	Good Supply
30	SW	33	"	"	"	Drilled	150	2666	-17	2649	150	2516	Edmonton	Soft		D.S.	Good Supply
31	NW	33	"	"	"	Drilled	150	2666	-20	2646	150	2516	Edmonton	Soft		D.S.	Good Supply
32	SE	35	"	"	"	Dug	23	2650			23	2627	Glacial Till?	Very Hard iron		D.S.	Good Supply
33	NE	35	"	"	"	Dug	10	2622	-2	2620	10	2612	Edmonton	Soft		D.S.	Fair Supply
34	NE	35	"	"	"	Drilled	60	2632	-12	2620	60	2572	Edmonton	Soft		D.	Good Supply
35	SE	36	"	"	"	Drilled	70	2708	-20	2688	70	2638	Edmonton	Soft		D.S.	Good Supply

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